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Analysis of health behaviours among athletes and football players

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Summary

Introduction: Sport is considered one of the oldest educational areas and forms of entertainment for mankind since antiquity. Over time, many new sports have been distinguished, among which,the most popular in Poland are: athletics and football. Athlete's image suggests that they take care for their health, and that their health behaviours should be the most intense.

Aim of the study: The aim of the study was to assess the severity of health behaviours among athletes and football players, as well as to compare and analyze their results.

Material and methods: The study included 100 sportsmen: 50 athletes and 50 footballers in the age range of 16-22 years. To assess health behaviors, the Inventory of Health Behaviors according to Z. Juczyński has been used.

Results: Analysis of the results showed that the football players are sportsmen who care more about their health. The result of their average health behaviour index was higher than in the case of athletes. The vast majority of athletes were assigned to the group with the average level of health behaviours, while the most football players were placed in the group showing high-quality health behaviours. However, taking into account the Sten average , all of them can be classified as mid-level results. In both disciplines, the lowest results were achieved in the category of "correct eating habits", the highest in the "positive psychological attitude" category.

Conclusions: The study showed that sportsmen against the rest of the society do not show a high level of health behaviours. However, among them football players are more health-oriented than athletes.

Key words: Sportsmen, health behaviours, athletes, football players

Aim of the study

The aim of the research was to assess health behaviours among athletes and football players. In addition, the research aimed to determine the severity of these behaviours depending on the type of discipline, age and gender.

Introduction

Sport is a very widespread field of life. Multidimensionality, diversity of disciplines makes it very popular among people in different age groups. Sport as entertainment has been accompanying mankind since ancient times. Organized Olympic games were aimed at freeing positive emotions among the spectators and ensured recognition and glory for the contestants. Over the centuries, this activity has undergone many metamorphoses [1]. The improvement of existing disciplines, the introduction of clearly defined rules, as well as the introduction of new competitions contributed to the popularization of sports events during major shows [2]. We can qualify athletics and football as the two most popular sports based on rivalry in Poland . The first of these, sometimes called the "queen of sport", consists of many competitions. Starting from sprinting, both on flat distance and on hurdles, medium and long-distance runs, ending on technical competitions, including jumps and throws. Athletes should show increased motor skills [3]. Dynamics and motor coordination are essential in all of the competitions. Sprinters focus mainly on developing speed and strength. However, in medium and long-distance runs, speed and durability are essential.

Athletes training technical competitions focus on strength, dynamics and motor coordination [4]. Football is another extremely important discipline for Polish sport. Although the history of its creation does not reach such distant times as athletics, it is undoubtedly popular among other sports. In Poland, football associates the largest number of players (mainly male) in all age groups. Efforts undertaken during training and competition are the resultant of endurance, speed, agility and coordination of movement. As a team game is characterized by the need for cooperation. Each player is assigned a specific position and task on the pitch [5]. Stereotypically, an athlete is a professional person who cares about physical development, caring for proper nutrition, sufficient sleep and regeneration. Is it really so? One of the methods of checking this phenomenon is the questionnaire on health behaviors [6]. Health-promoting behaviors, i.e. those with which we should identify athletes, and anti-health behaviors, i.e. those leading to the degradation of our health, can be distinguished [7].

Material and methods

A total of sportsmen participating in the study was 100, including: 50 athletes and 50 people training football. Among all the participants in the study, 80% were men (74 people), while there were significantly less women -20% (26 people). All sportsmen were in the age range 16-22. People included in the study are footballers belonging to the Inter-School Students' Sports Club CWZS and athletes belonging to the club: CWZS Zawisza - Athletes association in Bydgoszcz. The study was carried out after obtaining the consent of the Bioethical Commission at CM UMK in Bydgoszcz. The evaluation of health behaviour of sportmen was carried out using the questionnaire - Inventory of Health Behaviours according to Z. Juczyński. The questionnaire contains 24 definitions of behaviours related to health care, which are divided into four categories: PNŻ - that is, correct eating habits, ZP - preventive behaviours, PNP - defined as a positive mental attitude and PZ - health practices. For each of the 24 questions, the respondent responded by entering the appropriate number from 1 to 5, where 1 means: almost never, while 5: almost always. Finally, the total score is summed up, resulting in a general health behaviour indicator. The results range from 24 to 120 points. The results with upper values indicate a high intensity of the described behaviours, while the low values mean small intensities [8]. The obtained results are transformed into standardized norms called sten. In addition to the general interpretation of the results, the intensity of the four above-mentioned categories of health behaviours is also calculated separately. The questionnaires were left in the public room in the athletics and football section of CWZS Zawisza Bydgoszcz together with the information regarding the purpose of the study attached to them and a written request to complete them. The interested sportsmen after completion filled in the questionnaires to a special urn prepared for this purpose. However, from underage athletes,

questionnaires were collected along with the consent of the legal guardian to participate in the study of the protagonist [9].

Results

The results of the study were described using descriptive statistics, the Shapiro- Wilk test, the Fisher-Snedecor test and the Student's t-test. The significance level $\alpha = 0.05$ was assumed for testing. The analysis was carried out using a Microsoft Excel spreadsheet and the Statistica 13.1 program.

Statistical analysis included an estimate of the overall health behaviour index, which is the sum of the answers from the 24 questions in the questionnaire. The higher the value of the indicator, the unit has a higher level of health care. Figure 1 shows how the indicator is shaped in football players, and how among athletes. For about 11 people, this rate is very similar, while for the rest, footballers have a higher level of general health behaviours. The highest score: 112 points was obtained by a 16-year-old player training football, while with the lowest score of 57 points, the 22-year-old footballer completed the test.

The average rate of general health behaviors for football players was 87.22, while for athletes 80.86. A comparison of the results is shown in Figure 2.

Figure 1. Overall indicator of health behaviours in selected sports

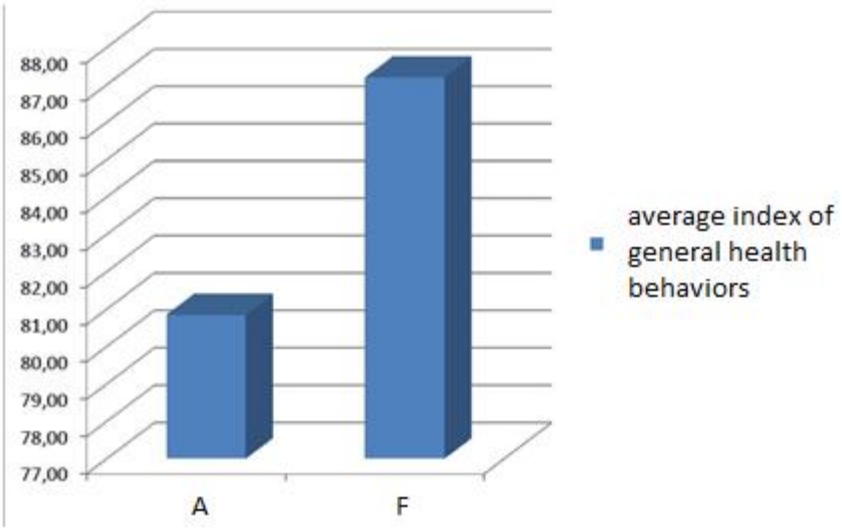

Figure 2. Average of the general indicator of health behaviours divided into sports disciplines

The general rate of health behaviors in the case of women ranges from 70 to 98 points, while in men from 57 to 112 points. Analysis of the health behaviour indicator depending on sex is presented in Figure 3.

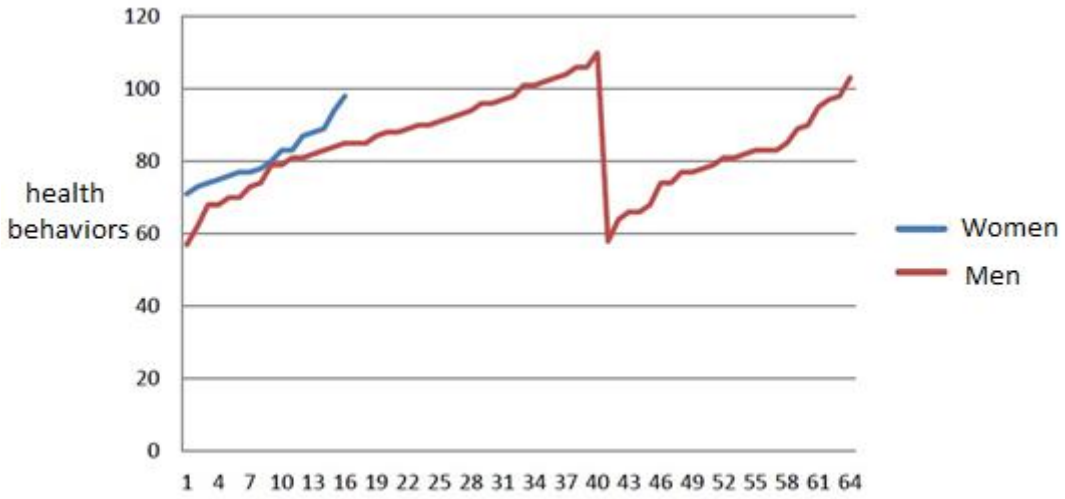

Figure 3. General indicator of health behaviors by sex

The highest average of the overall health behaviours index was obtained by people aged 18 (87.7) and 16 (86.9), while the lowest was at the age of 19 (78.3).

During the analysis of the obtained test results, a division was made according to the so-called the sten scale. For this purpose, it was necessary to standardize the general indicator of health behaviours. Table I presents descriptive statistics of the overall health behaviour index.

Descriptive statistics					
Variable	Nimportant	Average	Minimum	Maximum	Standard deviation
ZZ	100	84,5	57	112	11,85

Tab. I. Descriptive statistics of general indicator of health behaviours

By grouping the obtained results according to the sten scale, the most athletes (14) were assigned to sten 4., which proves the low score and 10 athletes to sten 5, 6, which proves the average results. No athlete got to sten 10. Two players and two athletes got to sten 1 and 9. Football players qualified mainly to stens over 5. Most of them, nine athlets and nine football players weret in the sten 5th and 6th. Among the players there was also one person who was assigned to sten 10. Football players with a significant advantage compared to athletes achieved results considered high, which is shown in Figure 4. Also calculated are the average sten for all sportsmen (n = 100), athletes (n = 50) and football players (n = 50). All results can be included to the average level, however, the players showed higher health care - figure 5.

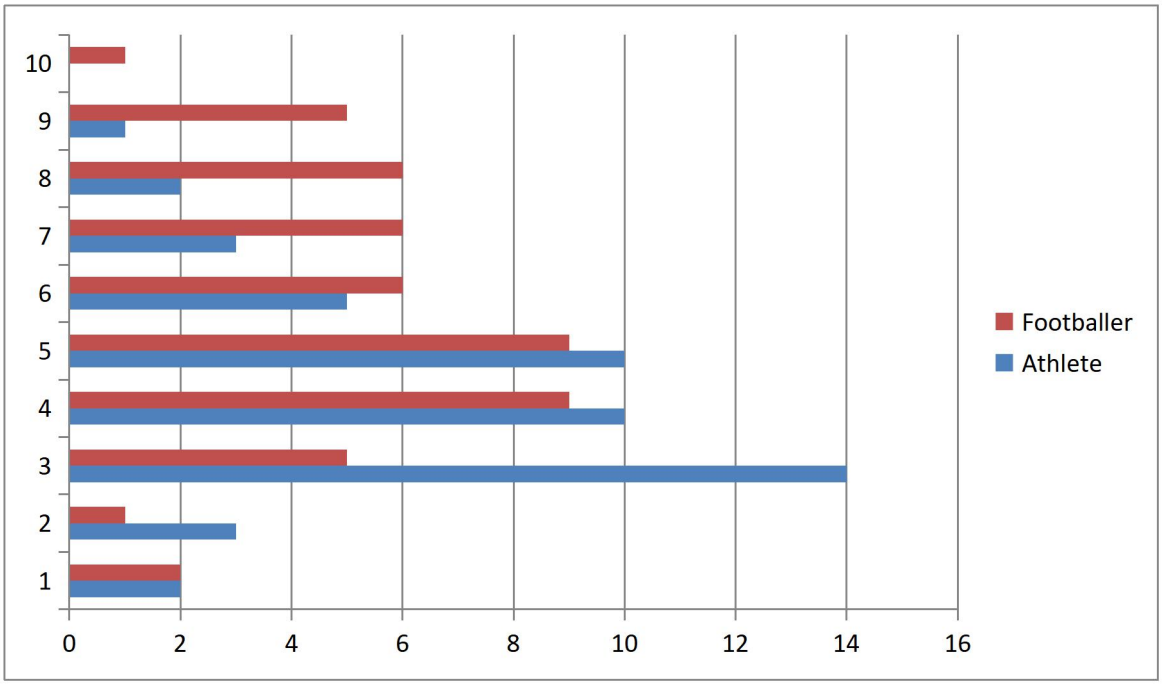

Figure 4. Results of athletes and football players according to the sten scale

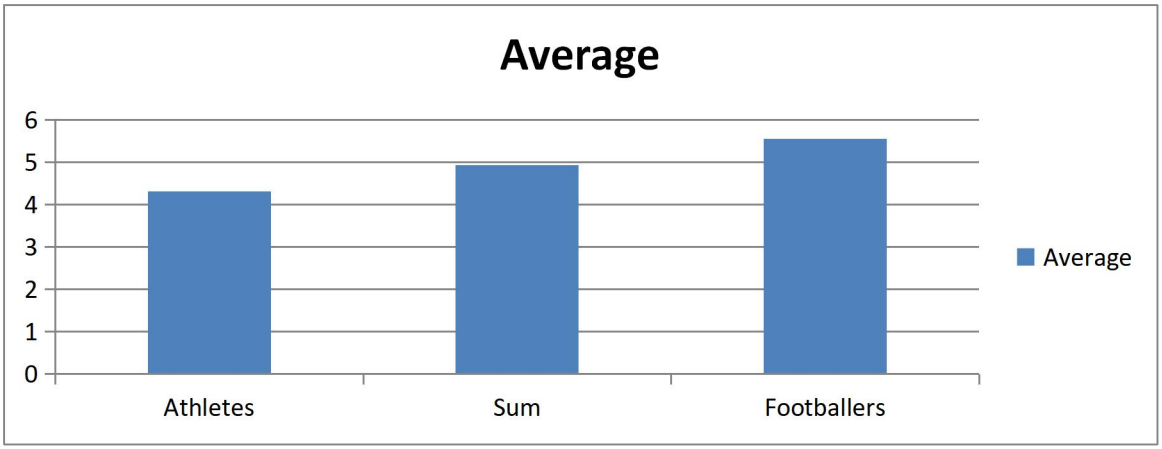

Figure 5. Average Sten for sathletes, footballers and all sportsmen

Then, the averages for individual categories of health behaviours were calculated. For the PNŻ category, from points which were entered by the respondent in items 1, 5, 9, 13, 17, 21 of the questionnaire, for the ZP category from item 2, 6, 10, 14, 18, 22, for the PNP category from item 3, 7, 11, 15, 19, 23, for PZ from items 4, 8, 12, 16, 20, 24. In addition, the deviation of the variable's value from the average was also calculated. The deviation of any of the above-mentioned variables does not exceed 1, so we can conclude that the averages for individual units are very similar to each other in a given category. The average for PNŻ was 3.36, for ZP - 3.44, PNP - 3.76, and for PZ - 3.45. The average in all categories oscillate around the value of 3.5. Descriptive statistics of these values are presented in Table II.

Descriptive statistics					
Variable	**Nimportant**	**Average**	**Minimum**	**Maximum**	**Standard deviation**
ZZ	100	84,5	57	112	11,86
PNŻ	100	3,33	1,66	5	0,77
ZP	100	3,44	2	4,83	0,71
PNP	100	3,76	2,33	5	0,55
PZ	100	3,45	1,67	4,83	0,67
Sten	100	5,5	0,99	9,98	2

Tab. II. Descriptive statistics for four categories of health behaviours

The above categories are called variables. They were examined using the t-Student test for independent groups, to assess whether the difference between means for athletes and footballers is statistically significant. To apply the given method, the assumptions about the normality of the distribution of variables, the lack of significant differences between the variances and the parallelity of the studied groups must be fulfilled. The assumption about the parallelity of groups is met,

therefore the normality of the distribution of individual variables will be examined using the Shapiro-Wilk test with the assumption of the significance level α = 0.05. The hypotheses that will be verified are:

H_0: the distribution of the tested variable is a normal distribution

H_A: the distribution of the tested variable is different thannormal distribution

The Shapiro-Wilk test for each variable gave a probability test value of $p > 0.05$, so a zero hypothesis should be taken that the obtained data can be characterized by a normal distribution. In addition, by reading from the quantile table for the Shapiro- Wilk test, the value of W (0.0.5; 80) = 0.96 shows that in each case it is smaller than the value of W, which confirms the truth of the null hypothesis. The Fisher test - Snedecor was also obtained using the Statistica program, which examines the hypothesis:

H_0: No significant differences between variances

H_A:There are significant differences between variances

Since all *p variances* values are greater than 0.05, this means that you should stick to the null hypothesis that there are no significant differences between the variances. All assumptions were met, therefore the results of the student's t test were considered to be correct. The data are presented in Table III.

Tests t: Grouping: Dyscipline Group 1: football players (PN) Grupa 2: Athletes (LA)									
Variable	**Average footballers**	**Average athletes**	**t**	**df**	**p**	**Standard deviation LA**	**Standard deviation PN**	**Quotient F Variances**	**P Variances**
PNŻ	3,496	3,233	1,531	78	0,129	0,800	0,731	1,198	0,576
ZP	3,596	3,275	2,052	78	0,044	0,688	0,710	1,064	0,847
PNP	3,904	3,613	2,468	78	0,016	0,546	0,510	1,145	0,675
PZ	3,526	3,343	1,223	78	0,225	0,699	0,638	1,198	0,576
Sten	5,56	4,32	2,470	78	0,016	1,688	2,158	1,635	0,127

Tab. III. The results of the Student's t test and Fischer-Snedecor test in groups of footballers and athletes

Since all *p values* are greater than 0.05, this means no significant differences between the variances between athletes and footballers. Also when analyzing the variable which is the PNŻ on

the basis of the correct value of p, it was established that the means for athletes and footballers do not differ statistically.

Student's t-test verifies the hypothesis:

H 0: meansfor athletes and for football players are the same

HA: *meansfor athletes and for football players differ statistically*

Analyzing the variable which is the PNŻ on the basis of the correct value of p, it was established that the means for athletes and footballers do not differ statistically

In the case of ZP and PNP variables, the test value p is lower than the assumed significance level α = 0.05. The average for athletes and footballers differ significantly among each other for the variables studied.

A student t test for the sten variable was also performed. The test shows that the averages of this variable differ statistically in the case of athletes and footballers. The average football players were 5.56, while athletes 4.32. However, when analyzing the mean Sten variables for both disciplines, they fall on the sten scale as average results.

The Shapiro-Wilk test for each variable gave a probability test value of p> 0.05, so a zero hypothesis should be taken that the obtained data can be characterized by a normal distribution. Besides reading from the quantile table for the Shapiro-Wilk test, the value of W (0.0.5; 80) = 0.96 shows that in each case it is smaller than the value of W, which confirms the truth of the null hypothesis.

Comparing the averages for men and women in the case of the variables PNŻ, ZP and PNP and Sten, it was found that they do not differ statistically. On the other hand, the mean values of the PZ variable show differences between women and men.

Discussion

The result of the conducted research was the assessment of the severity of health behaviours among sportsmen practicing various sports. Players are stereotypically associated with an impeccable lifestyle. Their behaviour should be predominantly those that relate to aspects of physical and mental well-being. In the examined group of athletes, the average result from the health behavior questionnaire was 5.5 sten, which is the average value. A study conducted by Weber-Rajek et al. [10] on a group of athletes from various disciplines aged 18-30, also confirms the obtained result, where the average severity of health behaviours is 5.17 sten. Similar results in

his research were shown by Muczyński et al. [11] examining players training American football in the 17-35 age group.

The research presented in the study also analyzed health behaviours between athletes and footballers. In total, the competitors of the second discipline performed better. Their results were on average higher in all categories of the questionnaire. Similar results were presented in the work of Juczyński [12]. In this case, both the general health behaviour index and its individual categories were higher among athletes than sportsmen in the so-called standardization group. Athletics and football are disciplines with a completely different structure. In the case of athletics, athletes can count only on themselves and on their own abilities, they have no support in the form of a team. Individual competition can be associated with an effort beyond possibilities and an increased level of stress. Individual sport often requires players to train up to two times a day. Strong preoccupation with sport is associated with a limited amount of free time, which may result in improper nutrition.

The questionnaire also evaluated behaviours such as consumption of fruit and vegetables, preserved food, sugar and animal fats, salt, whole-wheat bread and general nutrition. The low score among people in such a young group is very worrying. For the most part, they are sportsmen of developmental age, for whom a proper diet means not only adequate regeneration and exercise capacity but also harmonious and proper maturation. Analyzing the results of other authors, one can notice a similar nutritional tendency. Glama et al. [13] examining footballers with an average age of 27.43 years showed that athletes consuming vegetables every day are only 43.3%, up to 30% declared that they consume them only 3 times a week. Also Spałkowska et al. [14] in their study showed that athletes aged 24 years old who practice basketball and volleyball consume too few meals a day. Players who declared that they eat whole-grain bread and cereal every day are only 35% of all subjects. In turn, athletes consuming vegetables according to nutritional guidelines are 22%. In addition, as it turned out, in the examined group up to 40% eat sweets every day. The category in which the study group obtained the highest score with an average value of 3.75 is "positive psychological attitude". For comparison, the normalization group from the textbook of Z. Juczyński achieved the result of 3.52. Healthy mental well-being is an extremely important aspect in achieving success in sport. Respondents from Krajewska- Kułak et al. [15] footballers obtained in this category the value of 3.1, and thus definitely lower. Similarly, a lower value of 3.44 was demonstrated by Lulińska-Kuklik et al. [10] among team athletes. Health behaviors were also compared on the basis of sex. The mean values of the sten variable for women amounted to 5.06, while for men - 5.61. An application is therefore coming. that male sex is characterized by higher severity of health behaviors. In turn, the Lulińska-Kulik et al. [10] study showed a completely different tendency, where women obtained a higher value of the indicator.

Conclusions

1. Young sportsmen do not stand out from the society in terms of the severity of health behaviours, however, footballers show more health care in all categories of health behaviours than athletes.

2. Health behaviours in the case of women and men are comparable. Considering the classification of athletes in terms of age, it can be concluded that younger athletes show higher indicators of the severity of health behaviours.

3. Among athletes the lowest results concerned "proper eating habits", while the highest category "positive psychological attitude".

Bibliography

1.Boraczyński M., Boraczyński T., Obmiński Z., Podstawski R., Sasiewicz K., Stasiewicz P. i wsp. Budowa somatyczna i wydolność fizyczna piłkarzy nożnych i siatkarzy w wieku 16-18 lat. Medycyna Sportowa. 2012; 1: 39-49.

2. Migasiewicz J., Stodółka J. Lekkoatletyka. Centralny Ośrodek Sportu, Warszawa 2007; 8-35, 151-157.

3. Bellar D, Judge L., Judge M., McAtee G. Predictors of Personal Best Performance in the Hammer Throw for U.S. Collegiate Throwers. International Journal of Performance Analyisis in Sport. 2010; 10: 54-65

4. Ferro A., Floria P., Graupera J., Villacieros J. Analysis of Speed Performance In Soccer by a Playing Position and a Sports Level Using a Laser System. Journal of Human Kinetics. 2014; 44: 143-153.

5. Mikołajczyk Janusz, Byzdra Krzysztof, Piątek Mirosław, Kamrowska-Nowak Maria, Stępniak Robert. Analiza Wyników w Skokach Lekkoatletycznych Mężczyzn na Halowych Mistrzostwach Świata w Latach 1985-2006 = Analysis of Performance in Athletics Jumping Men on the Indoor World Championships in Years 1985-2006. Journal of Education, Health and Sport. 2015;5(12):386-408.

6. Roetert P.E., Proper nutrition for young athletes, National Strength and Conditioning Association 2004; 26 (3): 25–26

7. Zabrocki R., Kaczyński R., Ocena zachowań żywieniowych młodzieży uprawiających sporty wysiłkowe, na przykładzie pływania, Bromatologia i Chemia Toksykologiczna 2012; 3: 729–732

8. Kałużny Krystian, Śpica Dorota, Drobik Przemysław, Michalska Anna, Kałużna Anna, Kochański Bartosz, Zukow Walery. Ocena oraz porównanie zachowań żywieniowych u osób uprawiających sport zawodowo i amatorsko = Evaluation and comparison of nutritional behavior of people practicing professional and amateur sport. Journal of Education, Health and Sport. 2016;6(2):301-310.
9. Muszalik, M., Zielińska-Więczkowska, H., Kędziora-Kornatowska, K., & Kornatowski, T. (2013). Ocena wybranych zachowań sprzyjających zdrowiu wśród osób starszych w oparciu o Inwentarz Zachowań Zdrowotnych Juczyńskiego w aspekcie czynników socjo-demograficznych. *Probl Hig Epidemiol*, *94*(3), 509-513.
10. Bethke A., Lulińska-Kuklik E., Radzimińska A., Weber-Rajek M., Zukow W. Zachowania zdrowotne i urazy sportowe. Journal Education, Health and Sport. 2016; 6: 119-130.
11. Guzowski A., Krajewska- Kułak E., Muczyński D. Ocena narażenia na kontuzje oraz preferowanych zachowań zdrowotnych w grupie zawodników futbolu amerykańskiego. Pielęgniarstwo Chirurgiczne i Angiologiczne. 2013; 4: 125-133.
12. Juczyński Z. Narzędzia pomiaru w promocji i psychologii zdrowia. Wyd. PTP. Warszawa 2001: 110-116.
13. Glama E., Hoffman M., Juraszek K., Kalisz J., Kalisz Z., Weber-Rajek M. i wsp. Składniki odżywcze i ich rola w diecie sportowca. Journal of Education, Health and Sport. 2016; 6: 522-538.
Journal of Human Kinetics

14. Spałkowska A., Szczepańska E. Zachowania żywieniowe sportowców wyczynowo uprawiających siatkówkę i koszykówkę. Rocz Panstw Zakl Hig. 2012; 63: 483-489.

15. Guzowski A., Krajewska-Kułak E., Muczyński D. Ocena narażenia na kontuzje oraz preferowanych zachowań zdrowotnych w grupie zawodników futbolu amerykańskiego. Pielęgniarstwo Chirurgiczne i Angiologiczne. 2013; 4: 125-133.